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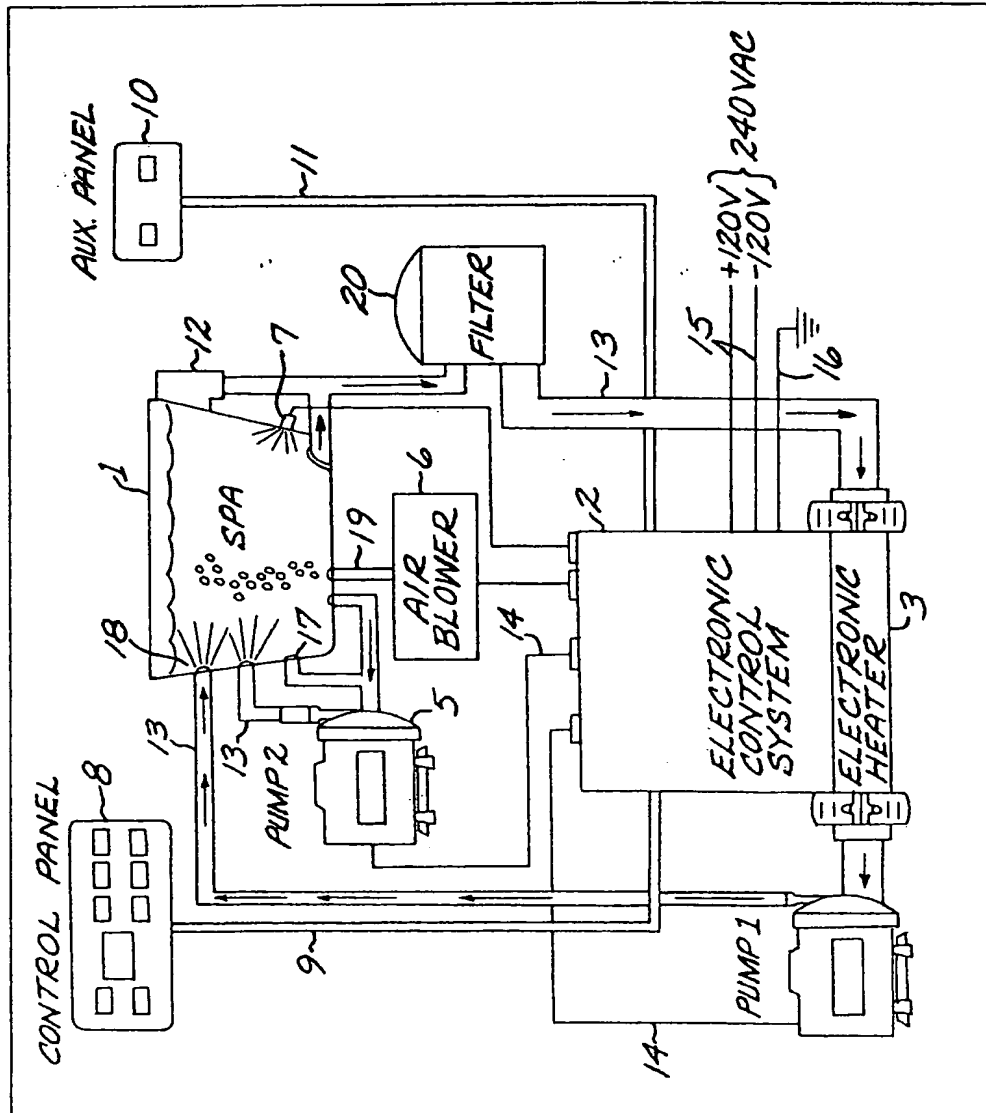


FIG. 1

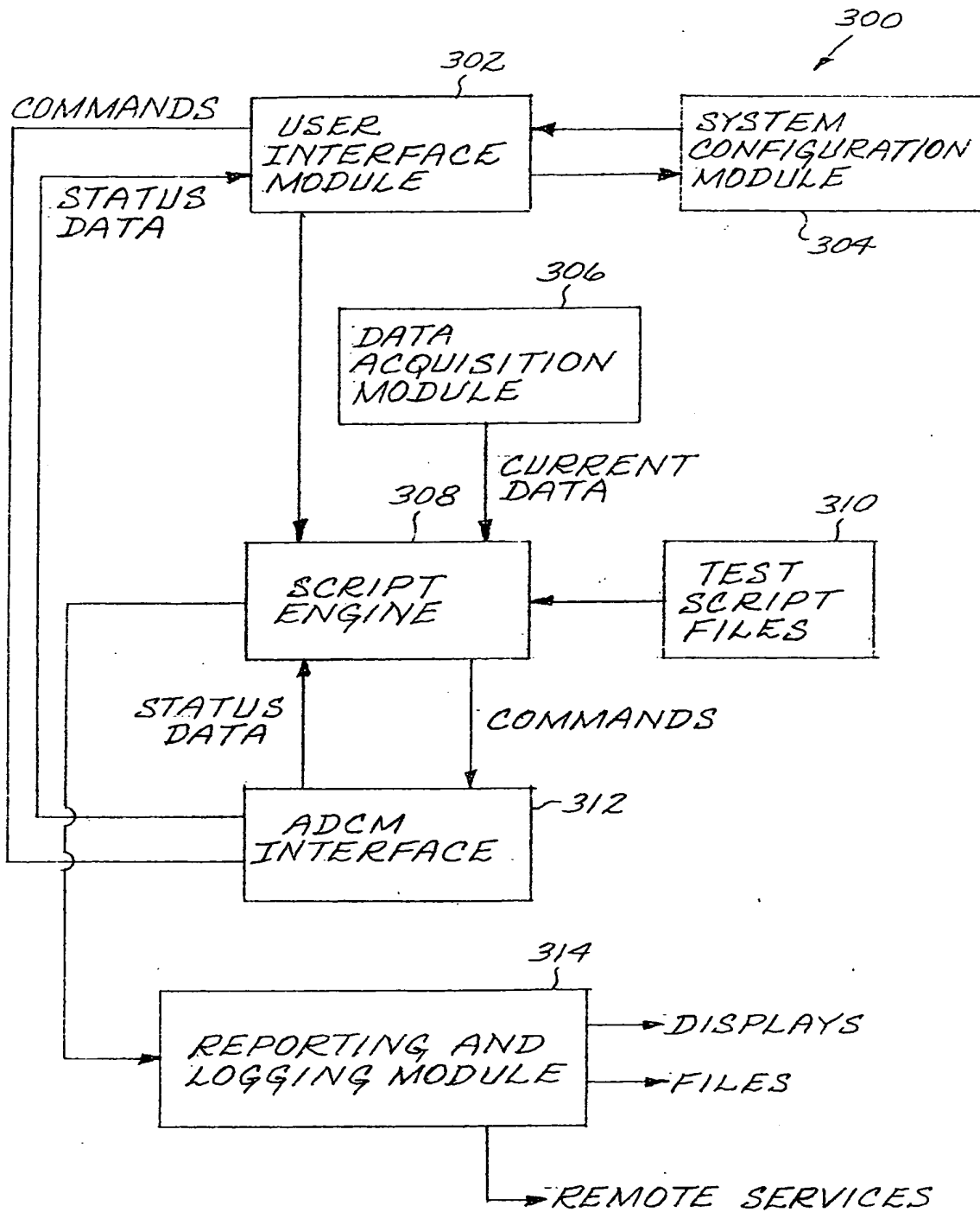


FIG. 2A

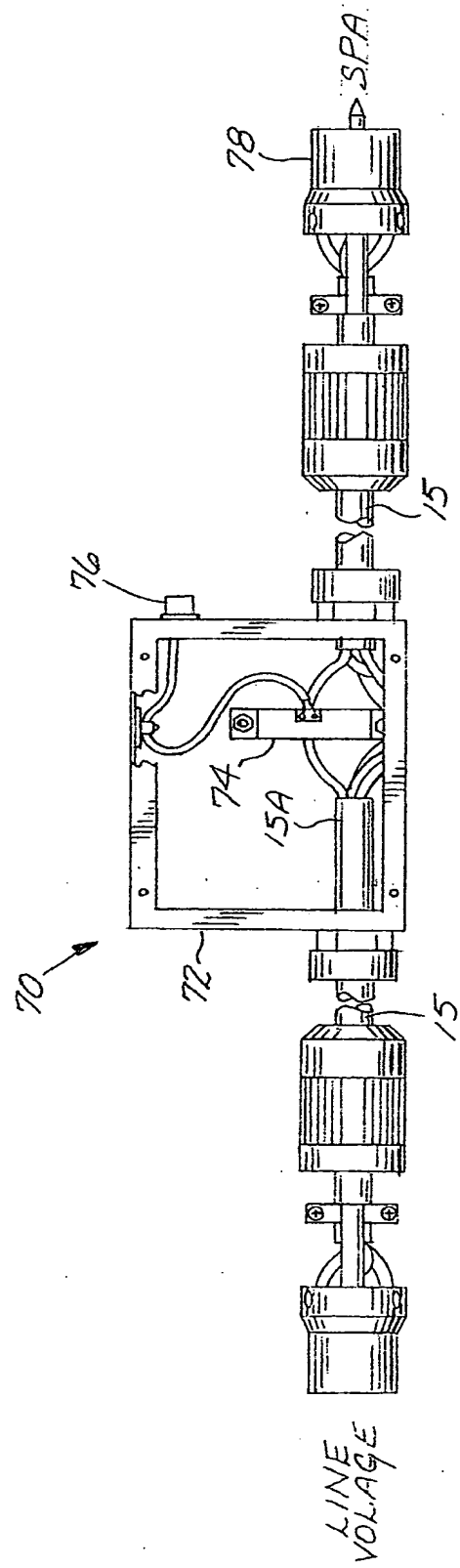


FIG. 3

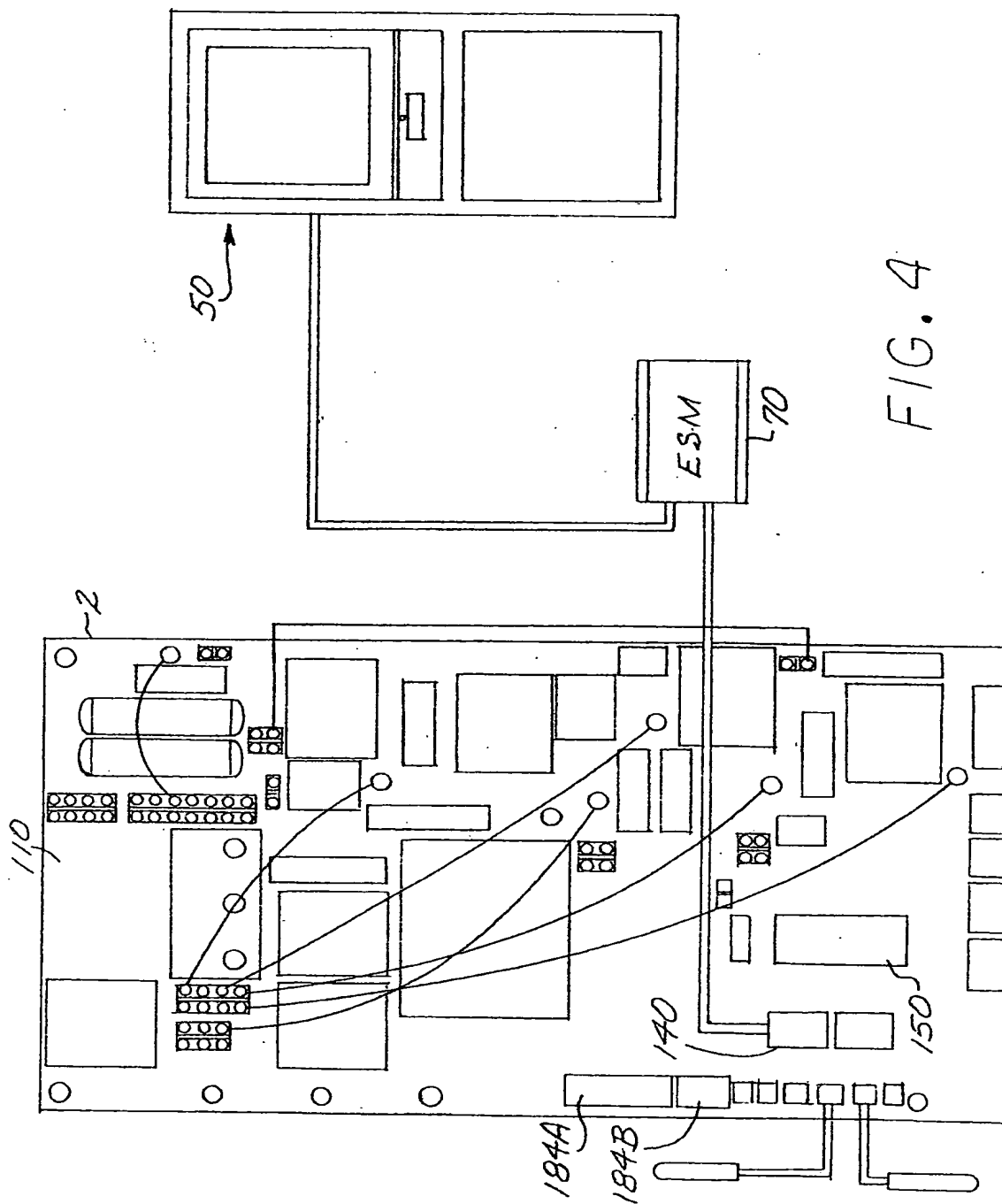


FIG. 4

FIG. 5A

FIG. 5B

'A' DIP SWITCH SETTINGS

ON	1	2	3	4	5	6	7	8	9	10	11	12
OFF	OFF	LOW AMP.	OFF	OFF	F°	15min 2HR	OFF	OFF	SEE TABLE ABOVE	OFF	OFF	OFF
ON	ON	HIGHT AMP.	ON	ON	C°	30min 4HR	ON	ON		ON	ON	ON
MODE	TEST MODE	AMPERAGE SELECT	FILTER PROG BY DURATION	TIME DISPLAY IN 24HR	DEG F°/C°	PUMP TIMEOUT PI-L TIMEOUT	CLEANUP CYCLE	O3 SUPPRESSED FOR 1 HR	CIRC.PUMP BEHAVIOR	CIRC.PUMP BEHAVIOR	CRIG. PI 1SPD NO O3 IN FLTR	PERSISTENT MEMORY RESET
ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

ALL UNUSED SWITCHES SHOULD BE OFF

'B' DIP SWITCH SETTINGS

ON	1	2	3	4	5	6
OFF	OFF	OFF	OFF	OFF	N/A	OFF
ON	ON	ON	ON	ON	N/A	ON
MODE	P-2 1SPD	P-2 ENABLE	BLOWER ENABLE	F.D. INSTEAD OF SPA LIGHT	N/A	PANEL BUTTON 'SCRUNCHING'
ON	ON	ON	ON	ON	ON	ON
OFF	OFF	OFF	OFF	OFF	OFF	OFF

ALL UNUSED SWITCHES SHOULD BE OFF.

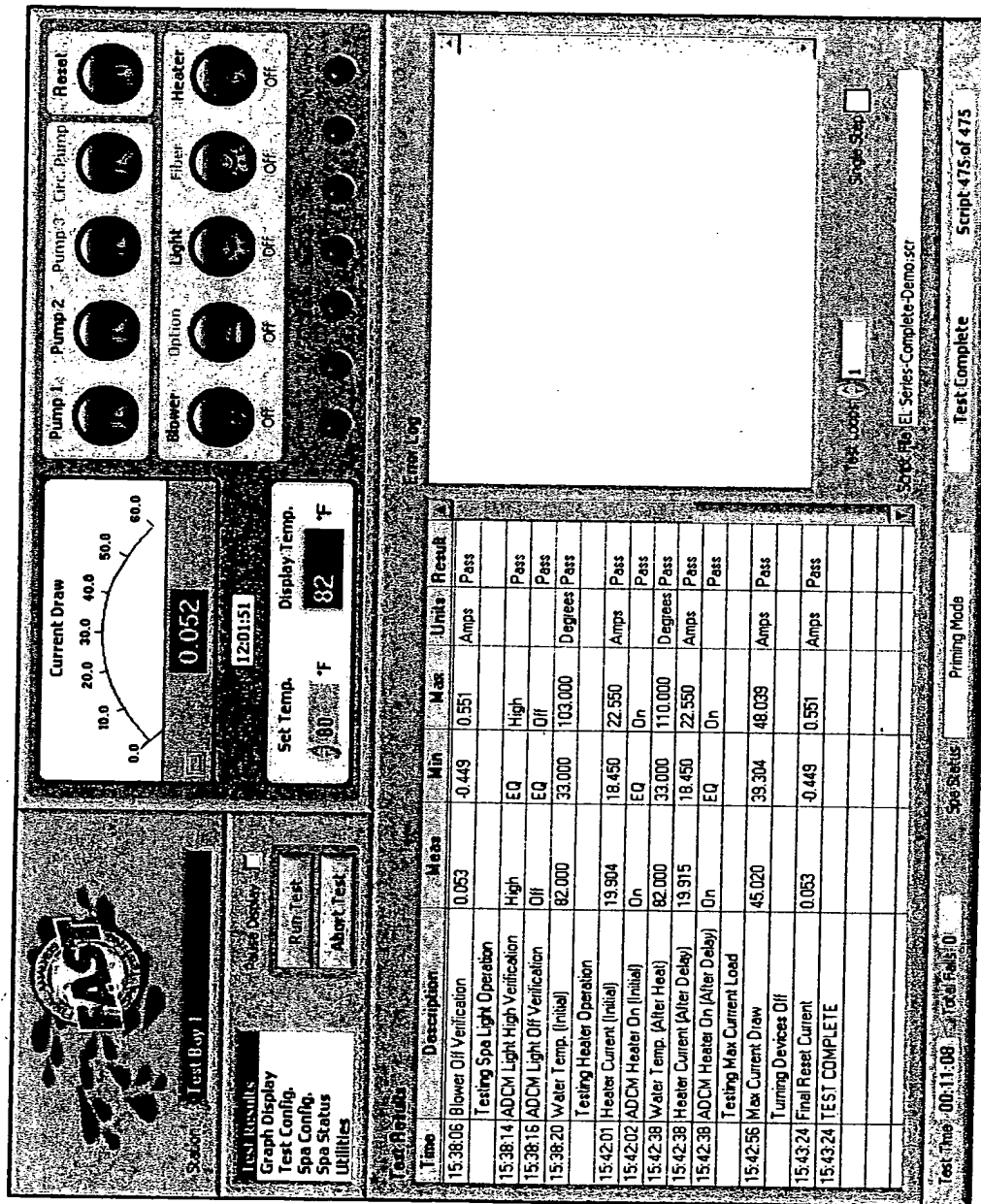


FIG. 6

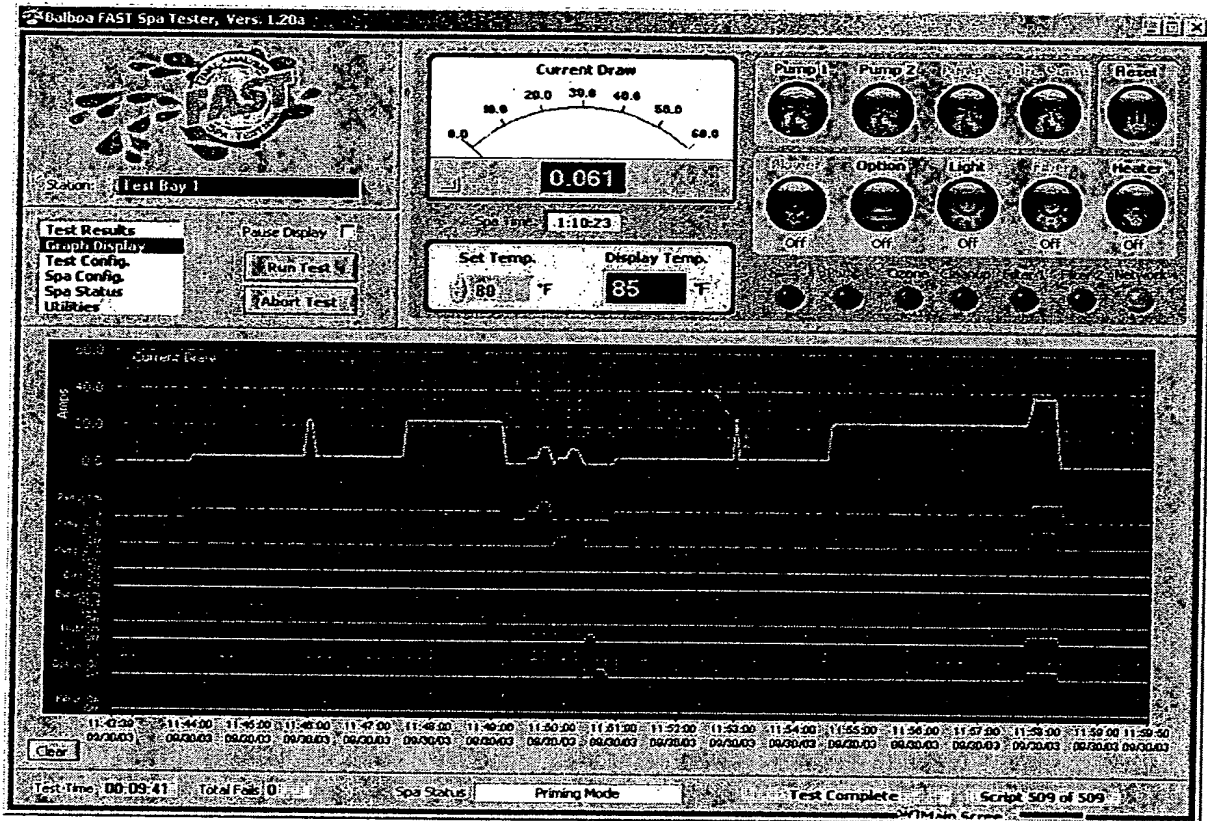


FIG. 7

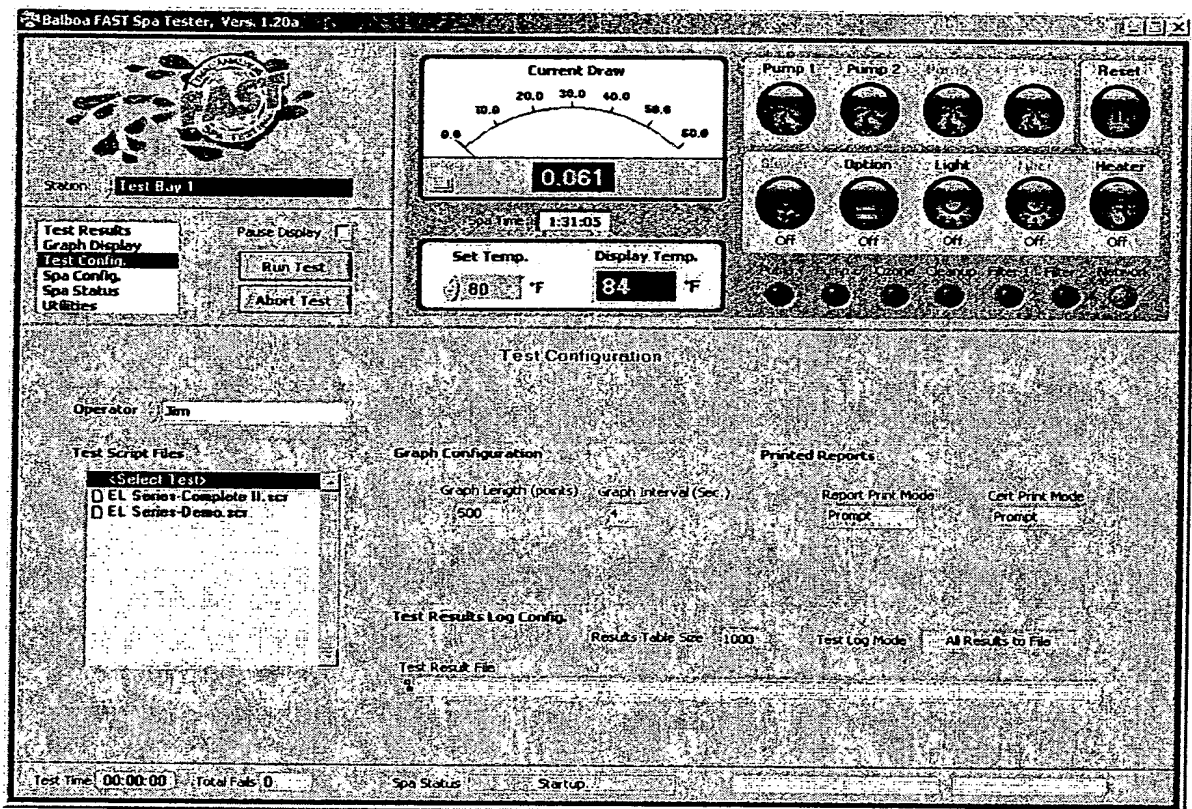


FIG. 8

Balboa FAST Spa Tester, Vers. 1.20a

Station: **Test Bay 1**

Test Results
Graph Display
Test Config
Spa Status
Utilities

Pause Display ☐

Run Test

Abort Test

Current Draw

2.95

Set Temp: 80 °F

Display Temp: 78 °F

Pump 1 Pump 2 Pump 3 On/Off Pump Reset

Blower Option Light Filter Heater

Off Off Off Off Waiting

Select the SPA Model, then enter Configuration and S/N data.

Revert Clear

Spa Model: **ELB000 Demo**

Spa S/N: **12-44267-01**

Spa Cabinet: **Redwood Eternawood**

Tub Material: **Acrylic**

Tub Color: **Jade**

Comments:

Device Status	Model	S/N
Pump 1: 2-Speed	4HP-Dual Speed	58010-200308290033
Pump 2: 2-Speed	4HP-Dual Speed	52654-200306190002
Pump 3: None	None	
Pump 4: None	None	
Pump 5: None	None	
Circ. Pump: None	None	
Blower: None	None	
Opt./Mist: Option	None	
Spa Light: On/Off	LED Type	
Filter: None		
Main Panel: 8-Button (LCD)		12-44267-01
Ozoneator: None		
Heater: 5.5KW		E56869

Selected Options

Spa Cover ☒

Power Drain ☐

Cover Lifts ☐

Dura Steps ☐

SpinClean ☒

Aromatherapy Cartridges ☐

LED Lighting System ☒

Aux. Panels: **1**

Test Time: 00:00:00 Total Fails: 0 Spa Status: Normal

FIG. 9

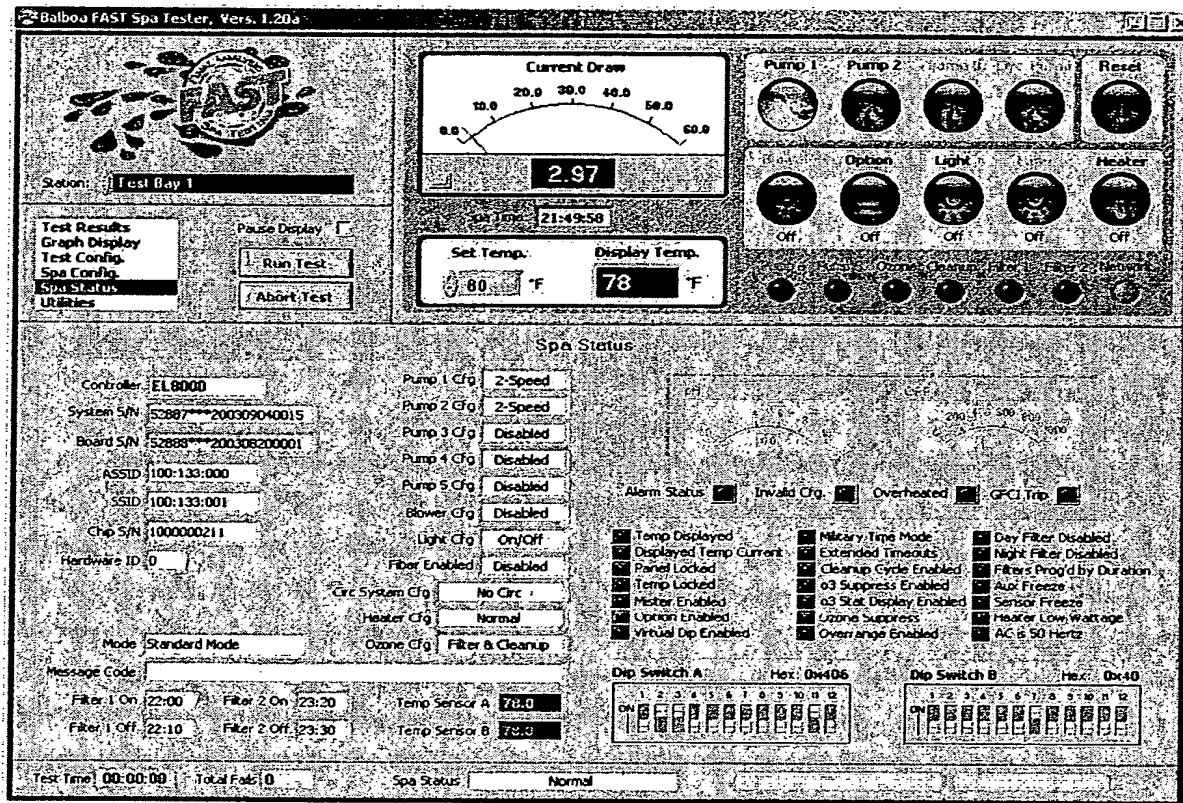


FIG. 10

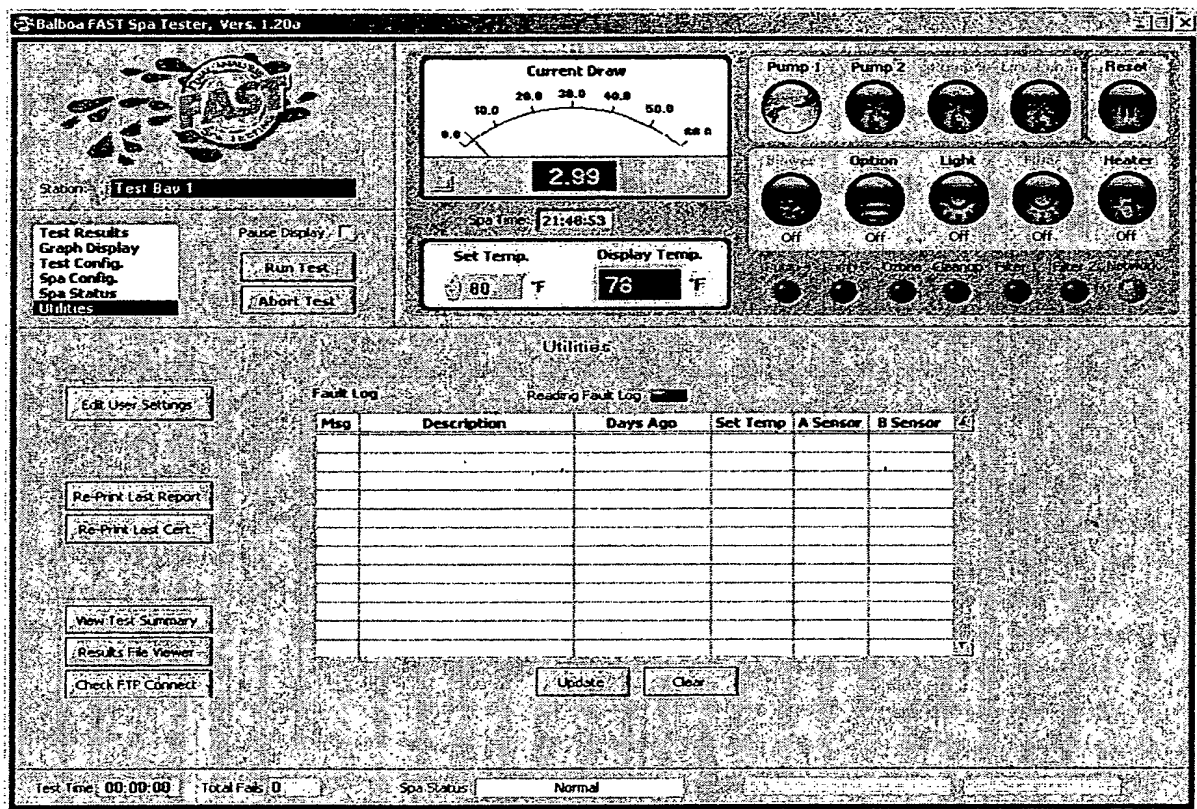


FIG. 11

Test Summary Viewer

Summary Log File

C:\Copy of SpA Test\Test Results\Summary Log.txt

Start Date

05/02/03

End Date

06/09/03

Today's Test Runs

Print Report

Start Time

00:00:00

End Time

23:59:59

Selected Test Runs

Done

All Test Runs

Total Runs

153

Completed Runs

72

Passed Units

55

Failed Units

98

% Yield

35.9

Date	Time	Spa Model	Spa S/N	Fault	Operator	Test Station	Test Completed
05/05/03	09:58:01			0	Operator 1	Test Bay 1	Test Aborted
05/05/03	14:06:31			1	Operator 1	Test Bay 1	Test Aborted
05/05/03	14:12:08		123456	3	Operator 1	Test Bay 1	Test Complete
05/05/03	14:31:11		123456	1	Operator 1	Test Bay 1	Test Aborted
05/06/03	12:11:03	Ultra 1000		0	Operator 1	Test Bay 1	Test Complete
05/06/03	12:12:36	Ultra 1000		0	Operator 1	Test Bay 1	Test Aborted
05/06/03	12:17:11	Ultra 1000		0	Operator 1	Test Bay 1	Test Aborted
05/06/03	12:21:30	Ultra 1000		0	Operator 1	Test Bay 1	Test Aborted
05/06/03	12:22:07	Ultra 1000		0	Operator 1	Test Bay 1	Test Complete
05/06/03	12:24:04	Ultra 1000		0	Operator 1	Test Bay 1	Test Complete
05/06/03	12:34:49	Ultra 1000		0	Operator 1	Test Bay 1	Test Complete
05/06/03	12:37:31	Ultra 1000		0	Operator 1	Test Bay 1	Test Complete
05/06/03	14:29:08			0	Operator 1	Test Bay 1	Test Complete
05/06/03	14:33:09			0	Operator 1	Test Bay 1	Test Aborted
05/08/03	11:50:53	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted
05/08/03	11:55:22	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted
05/08/03	11:57:02	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted
05/08/03	15:51:06	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted
05/08/03	15:53:08	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted
05/08/03	15:54:34	Ultra 5000		0	Operator 1	Test Bay 1	Test Aborted

FIG. 11A

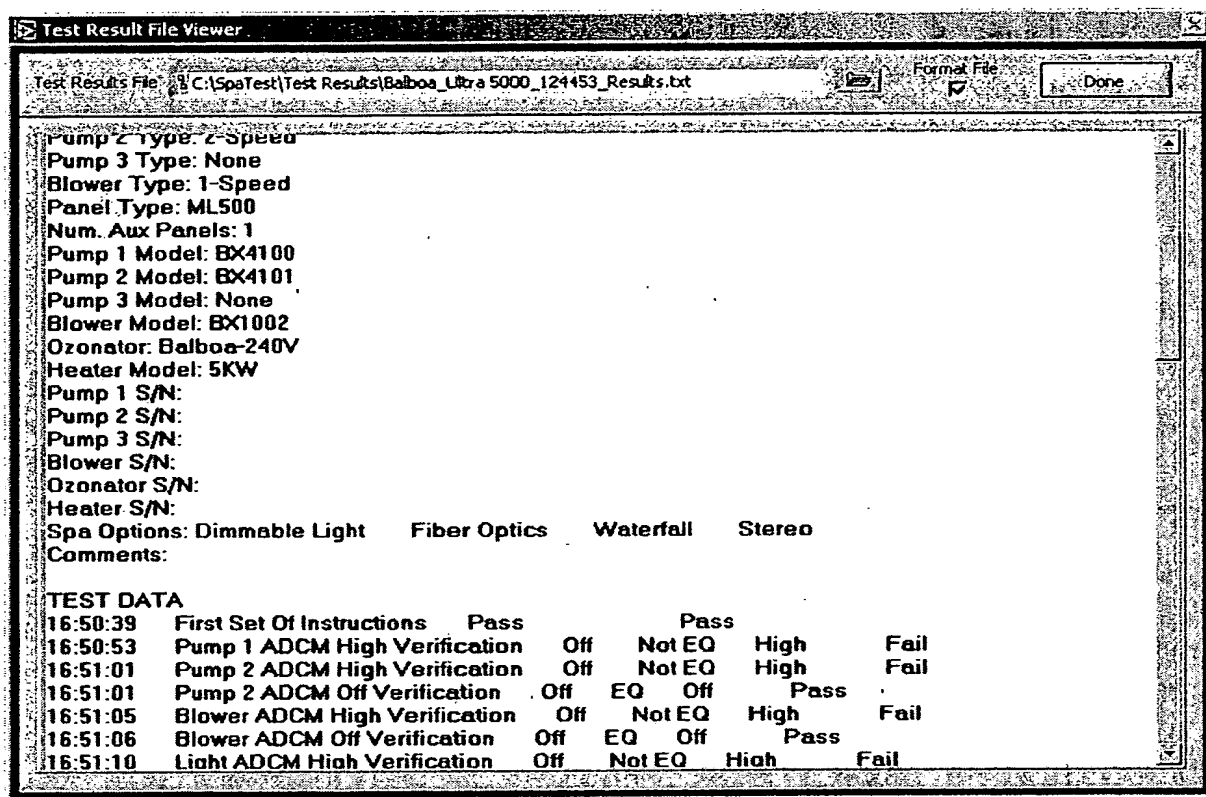


FIG. 11B

FAST Station Results

Result: **PASS**

Spa Model:	Ultra-2000	Exterior Color:	Grey	Test Station:	15
Serial Number:	0012345	Tub Material:	Red	Script File:	Demo0212-No System
Date Tested:	02/06/36 23:42:52	Tub Color:		Total Fails:	0

Time	Meas Name	Measurement	Min	Max	Result
23:35:08	First Set Of Instructions	Pass			Pass
23:35:08	*** Start of Test ***				
23:35:33	Pump 1 ADCM High Verification	High	EQ	High	Pass
23:35:51	Pump 2 ADCM High Verification	High	EQ	High	Pass
23:36:04	Pump 2 ADCM Off Verification	Off	EQ	Off	Pass
23:36:18	Blower ADCM High Verification	High	EQ	High	Pass
23:36:20	Blower ADCM Off Verification	Off	EQ	Off	Pass
23:36:28	Light ADCM High Verification	High	EQ	High	Pass
23:36:31	Light ADCM Off Verification	Off	EQ	Off	Pass
23:36:39	Fiber ADCM High Verification	Fiber+Wheel	EQ	Fiber+Wheel	Pass
23:36:48	Fiber ADCM Off Verification	Fiber	EQ	Fiber	Pass
23:36:56	Fiber ADCM Off Verification	Off	EQ	Off	Pass
23:36:56	Heater ADCM On Verification	On	EQ	On	Pass

FIG. 11C

FAST Station Results

Spa Model:	Ultra-2000	Exterior Color:	Grey	Test Station:	15	Result:	FAIL
Serial Number:	0012345	Tub Material:	Red	Script File:	Demo0218.txt		
Date Tested:	02/06/36 23:34:31	Tub Color:		Total Fails:	7		

Time	Meas Name	Measurement	Min	Max	Result
23:30:51	Dip Switch A check	8	EQ	6	Pass
23:30:51	Dip Switch B check	CE	EQ	CE	Pass
23:30:57	First Set Of Instructions	Pass			Pass
23:30:57	*** Start of Test ***				
23:31:31	Pump 1 High Current	0.000 Amps	11.320	13.320	Fail **
23:31:31	ADCM Pump 1 High Verification	High	EQ	High	Pass
23:31:54	Pump 2 Low Current	0.000 Amps	3.000	4.000	Fail **
23:31:54	ADCM Pump 2 Low Verification	Low	EQ	Low	Pass
23:32:19	Pump 2 High Current	0.000 Amps	7.000	9.000	Fail **
23:32:20	ADCM Pump 2 High Verification	High	EQ	High	Pass
23:32:28	ADCM Pump 2 Off Verification	Off	EQ	Off	Pass
23:32:48	Blower High Current	0.000 Amps	3.000	5.000	Fail **
23:32:48	ADCM Blower High Verification	High	EQ	High	Pass
23:32:50	ADCM Blower Off Verification	Off	EQ	Off	Pass
23:32:59	ADCM Light High Verification	High	EQ	High	Pass
23:33:01	ADCM Light Off Verification	Off	EQ	Off	Pass
23:33:11	Fiber Wheel Current	0.000 Amps	1.000	1.800	Fail **
23:33:11	ADCM Fiber Wheel Verification	Fiber Wheel	EQ	Fiber Wheel	Pass
23:33:20	ADCM Fiber Only Verification	Fiber	EQ	Fiber	Pass
23:33:29	ADCM Fiber Off Verification	Off	EQ	Off	Pass
23:33:31	Heater Current	0.000 Amps	18.000	20.000	Fail **
23:33:32	ADCM Heater On Verification	On	EQ	On	Pass
23:33:58	Water Temp @98	74.000 degrees	97.250	98.750	Fail **
23:34:26	TEST COMPLETE				

FIG. 11D

Pass Certificate

Certificate of Verification

Date Tested: Wed, Feb 06, 2036

Spa Information

Spa Model: Ultra-2000 Spa S/N: 0012345

Spa Features

Exterior Color: Grey Pump 1: 2-Speed
Tub Material: Red Pump 2: 2-Speed
Tub Color: Blower: 1-Speed
Options: Ozone, Waterfall, Stereo, Television, Dimmable Light, pH/ORP
Sensor, Mister, Fiber...

*We are proud of the trademark, outstanding quality, and the ultimate
performance built into every Spa.*

We hope you will enjoy your spa for many years to come.

Signed,

John L. Smith

John L. Smith, Director

FIG. 11E

User Configuration Utility

Spa Configurations Device Ratings Colors & Options User Profile

Spa Cabinets	Spa Tub Colors	Spa Ctrl. Panels	Special Options
Cedar Stain	Galaxy Green	ML500	1 Waterfall
Maple Stain	Caribbean	ML700	2 Stereo
Gray Stain	Seaspray	ML900	3 Chemical Dispenser
	Flourescent Pink		4 Skimmer
	Purple-ish Green		5 Fountain of Youth
			6
			7
			8
			9
			10
			11
			12
			13
			14

Tub Materials
Acrylic
Fiberglass

Hints:
 Right Click on a Table to insert or delete Rows.
 Never insert or delete Columns.
 Select the same number of Cells for paste as were copied, or columns will be inserted.

File Rev. Date: 9/18/2003 2:24 PM Revert File Save to File Exit

FIG. 11F

User Configuration Utility

Spa Configurations Device Ratings Colors & Options User Profile

Pump Ratings

Pump Model	Low	High
BX4101	4.00	8.00
BX4102	6.00	10.00
BX4103	8.00	12.00
Century	3.00	8.00
Pump 4 Model	0.00	0.00
Pump 5 Model	0.00	0.00

Blower Ratings

Blower Model	Low	Med	High
BX1002	2.50	5.00	8.00
BX1004	4.50	8.00	11.00
BX1006	6.50	9.00	13.00
BX1008	7.50	10.00	14.00
BX10010	8.50	12.00	14.00
Mark	2.10	2.90	3.50

Option/Mister Ratings

Option	Amps
ACME Mister Pump	2.25
ACE Mister Pump	1.75
User Device1	5.00
User Device2	10.00

Important: 1. For single speed pumps, specify current in the High column, and set Low value to 0.0.
2. For single speed blowers, specify High. For Two-speed blowers specify High and Low currents.

Circ. Pump Ratings

Circ. Model	Amps
CIRC_Pump 1	1.00
CIRC_Pump 2	2.50
Century Circ	4.40

Heater Ratings

Heater Model	Amps
5.5KW	20.50
4.0KW	16.00

Ozonator Ratings

Ozonator Model	Amps
Balboa-120V	5.50
Balboa-240V	7.50
BrandX	11.50

Fiber Ratings

Fiber System	Fiber	Wheel
Bulb Type	0.00	0.00
LED Type	0.40	1.10

Spa Light Ratings

Light Type	Low	Med	High
Incandescent	0.05	0.10	0.20
LED Type	0.03	0.09	0.15

Hints:
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 Never insert or delete Columns.
 Select the same number of Cells for paste as were copied, or columns will be inserted.

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FIG. 11G

Spa Configurations

Device Ratings

Colors & Options

User Profile

Spa Model

Model A

Spa Cabinet

Red Cedar

Tub Material

Microban

Tub Color

<Select>

Main Panel

ML900

Pump 1

Circ. Pump

High Flow 2 Spd

Pump 2

Blower

<Select>

Pump 3

Option/Mister

None

Pump 4

Spa Light

Incandescent

Pump 5

Fiber

None

Ozonator

None

Heater

<Select>

Waterfall

<Select>

Stereo (AM/FM)

<Select>

Pop-up Speakers

<Select>

Chemical Dispenser

<Select>

Skimmer

<Select>

Comfort Design Pillows

<Select>

Sensation Aroma Therapy

<Select>

Dip Switch A

0x206

Dip Switch B

0x42

Apply/Copy

Paste

Add Spa

Insert Spa

Delete Spa

Revert Spa

Spa Model

Model A

Dip A

0x206

Dip B

0x42

Cabinet

Red Cedar

Tub Material

Microban

Tub Color

<Select>

Main Panel

ML900

Aux. No.

0

Pump 1

High Flow 2 Spd

Pump 2

<Select>

Model A

Model B

Demo 2000

Demo 2000 No Blower

Model A

Model B

Demo 2000

Demo 2000 No Blower

File Rev. Date

2/26/2004, 11:55 AM

Revert File

Save to File

Exit

FIG. 11H

